

—Save— Important Safety Instructions

Read Rules for Safe Operation and Instructions Carefully

Working in vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during normal battery operation. For this reason, it is of utmost importance that each time before using your charger, you read this manual and follow the instructions exactly.

WARNING: Handling the cord on this product or cords associated with accessories sold with this product, will expose you to lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. **Wash hands after handling.**

A.

GENERAL BATTERY SAFETY

INTRODUCTION

Your battery charger has been designed to provide years of service. This instruction manual contains information on safety, operation, and maintenance of your new charger. Make sure that you are familiar with this information before using the charger.

This battery charger is ideal for recharging batteries in snowmobiles, ATVs, garden tractors and motorcycles. It also will warm large batteries found in automobiles and marine applications.

1. Before you use your battery charger, be sure to read all instructions written in the manual, on the charger and carton.
2. Do not expose to rain or snow.
3. The use of an attachment not recommended or sold by the charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
4. To reduce risk of damage to electric plug and cord, pull by plug rather than the cord when disconnecting charger.
5. An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:
 - a) the pins on plug of extension cord are the same number, size and shape as those of plug on charger.
 - b) the extension cord is properly wired and in good electrical condition; and
 - c) the wire size is large enough for AC ampere rating of charger as specified in the following chart.
6. Do not operate the charger with damaged cord or plug replace them immediately.
7. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified service person.
8. Do not disassemble charger; take it to a qualified service person when service or repair is necessary. Incorrect assembly may result in a risk of electric shock or fire.
9. To reduce risk of electrical shock, unplug the charger from outlet before attempting any maintenance or cleaning.
10. **WARNING - RISK OF EXPLOSIVE GASES.**

WORKING IN THE VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF THE UTMOST IMPORTANCE THAT EACH TIME BEFORE USING YOUR CHARGER; YOU READ THIS MANUAL AND FOLLOW THE INSTRUCTIONS EXACTLY.

To reduce the risk of battery explosion, follow these instructions and those published by the battery manufacturer. Review the cautionary markings on the battery charger and battery.

Length of cord (feet):	25	50	100	150
AWG size of cord:	18	18	16	14

SCHUMACHER ELECTRIC CORPORATION

801 BUSINESS CENTER DRIVE • MOUNT PROSPECT, ILLINOIS 60056-2179

Send Warranty Product Repairs to: 1025 E. Thompson, Hoopeston, IL 60942-0280

Call Customer Service if you have questions: 1-800-621-5485

B.**PERSONAL PRECAUTIONS**

1. Someone should be within range of your voice, or close enough to come to your aid, when you work near a lead acid battery.
2. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
3. Wear eye protection and clothing protection. Avoid touching eyes while working near a battery.
4. If battery acid contacts skin or clothing, immediately wash with soap and water. If acid enters eye, immediately flood with running cold water for at least 15 minutes and get medical attention immediately.
5. Never smoke or allow a spark or flame in the vicinity of battery or engine.
6. Do not drop a metal tool onto the battery. It might spark or short-circuit the battery or other electrical part that may cause an explosion.
7. Remove personal metal items such as rings, bracelets, necklaces and watches when working near a lead acid battery.
8. Use the charger for charging a lead-acid battery only. It is not intended to supply power to a low-voltage electrical system other than in an automotive application. Do not use battery charger for charging dry cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons or damage to property.
9. Never charge a frozen battery.
If necessary to remove battery from vehicle to charge, always remove grounded terminal from the battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.

C.**PREPARING TO CHARGE**

1. Be sure area around the battery is well ventilated while battery is being charged. Gas can be blown away by using a piece of cardboard or other non-metallic material as a fan.
2. Add distilled water in each cell until battery acid reaches levels specified by the battery manufacturer. This helps purge gas from cells. Do not overfill. For a battery without cell caps, carefully follow manufacturer's instructions.
3. Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.
4. Determine voltage of battery by referring to vehicle owner's manual.
DANGER - Never alter the AC plug provided - if it will not fit the outlet, have a proper outlet installed by a qualified electrician. Improper connection can result in the risk of electrical shock.
WARNING - Connect and disconnect the battery clamps only when the AC power cord is disconnected or arcing may result.
CAUTION - Do not expose to rain; replace damaged cords or wires immediately.

D.**BATTERY CHARGER LOCATION**

1. Locate charger as far away from battery as DC cables permit.
2. Never place charger directly above battery being charged.
3. Never allow battery acid to drip on charger when reading specific gravity or filling battery.
4. Do not operate charger in a closed-in area or restrict ventilation in any way.
5. Do not set battery on top of charger.

E.**DC CONNECTION PRECAUTIONS**

Connect and disconnect DC clamps only after removing charger AC power cord from the wall outlet. Do not permit clamps to touch each other.

F.**CHARGING BATTERY INSTALLED IN VEHICLE**

Follow these steps when battery is installed in vehicle. A spark near battery may cause battery explosion. To reduce the risk of a spark near the battery:

1. Position AC power cord and DC output cord to reduce risk of damage by hood, door, or moving engine parts.
2. Stay clear of fan blades, belts, pulleys and other parts that can cause injury to persons.
3. Check polarity of battery posts. Positive battery post is usually larger diameter than the Negative post.
4. Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to the chassis (as in most cases), see Item 5. If Positive post is grounded to the chassis, see Item 6.
5. For negative grounded vehicle, connect Positive clamp from charger to Positive ungrounded post. Connect Negative (Black) clamp to vehicle chassis or engine block away from battery. Do not connect to carburetor, fuel lines or sheet metal body parts. Connect to a heavy-gauge metal part of the frame or engine block.
6. For positive-grounded vehicle, connect Negative (Black) clamp from charger to ungrounded Negative (Black) post of battery. Connect positive (Red) clamp to vehicle chassis or engine block away from battery. Do not connect to carburetor, fuel lines, or sheet metal body parts. Connect to a heavy-gauge metal part of the frame or engine block.
7. When disconnecting charger, disconnect at wall receptacle, remove clamp from vehicle chassis and then remove clamp from battery post.

G.

CHARGING BATTERY OUTSIDE OF VEHICLE

Follow these steps when battery is outside of vehicle:

1. Check polarity of battery posts. Positive battery post is usually a larger diameter than the Negative post.
2. To keep a safe distance from the battery, attach at least a 24-inch long, 18-gauge or heavier insulated jumper cable to the Negative battery post.
3. Connect Positive (Red) charger clamp to Positive post of the battery.
4. Position yourself and free end of the cable as far away from the battery as possible, then connect the Negative clamp to the free end of the cable. Do not face battery when making this final connection.
5. When disconnecting charger, always do so in reverse sequence of connecting procedure and disconnect the first connection while as far away from the battery as possible.
6. A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

This battery charger is equipped with an output cord that terminates with a (2) two pin polarized connector. See Fig. #1 below.

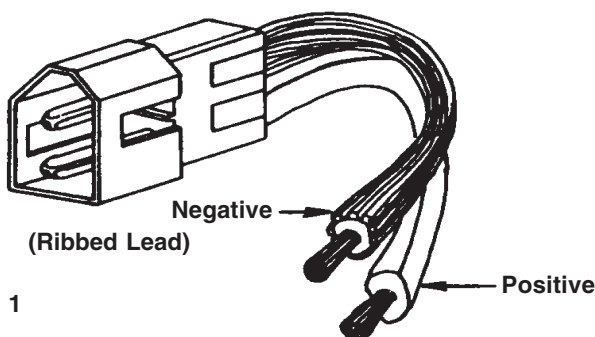


FIG. 1

When making connections to the battery, use the polarized output attachment cord supplied (Fig. #2). Warning: For your safety, before connecting and disconnecting this attachment, remove the AC power cord from electrical outlet. NOTE: When not in use, store all cords and connectors in a clean, dry place and protect them from damage.

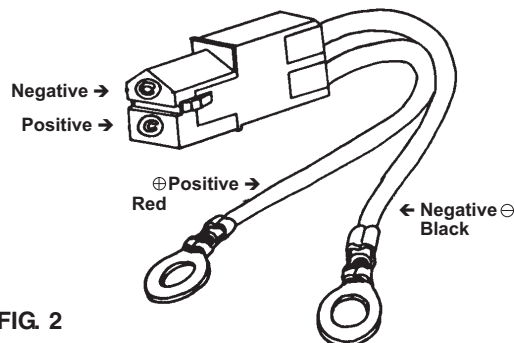


FIG. 2

If ring connectors are attached to the battery, as shown in Fig. #3, you may quickly disconnect the charger from the battery by pulling the connectors apart. By purchasing additional output cords, you can increase the usage of the charger, for instance, have one attachment cord for a motorcycle another for a lawn tractor battery or ATV etc. Call 1-800-621-5485 for details.

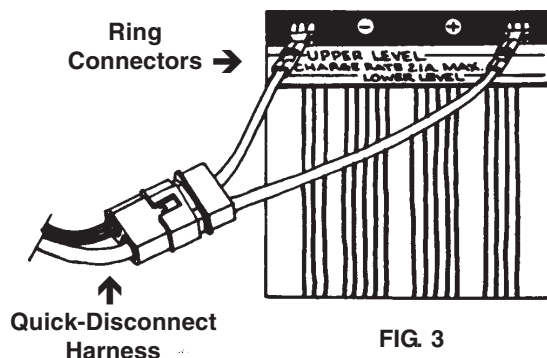


FIG. 3

H.

OPERATING INSTRUCTIONS

1. For use with 12 volt batteries only.
2. Connect charger to a battery as outlined in Section F or G.
3. Plug AC power cord into 120 AC volt receptacle.
4. The amber light indicates battery is being charged. The green light indicates battery is fully charged. The red light signifies that connection to the battery is hooked up incorrectly. Reverse clips or rings.
5. When the charger is plugged into an AC outlet but not connected to a battery the green light will illuminate. For proper operation, the battery charger must be plugged into an AC outlet and connected to a battery.
6. When properly connected the amber light should be illuminated until the battery voltage reaches approximately 14.4 volts, then turns off and the green light turns on, indicating that the battery has reached full charge.
7. When the green light is on, output from the charger to the battery is turned off and the battery voltage will begin to drop. When the battery drops to 13.2 volts, output to the

battery is turned on again until the battery voltage once again reaches approximately 14.4 volts. This cycling will maintain the battery at its full charge state without over charging the battery. It will continue as long as the charger is plugged in and connected to a battery. If the battery is connected to a circuit that occasionally draws current from the battery, the on portion of the charge cycle will remain on until the battery once again reaches approximately 14.4 volts.

8. NEVER leave the battery connected to the charger while the charger is unplugged from the AC outlet. The reason is that the charger draws a few milli amperes from the battery, which will eventually run down the battery.
9. Battery types: Most automotive and marine starter, deep cycle, AGM and gel type batteries can be charged and maintained.

CAUTION - To reduce risk of fire or electric shock, connect battery charger directly to grounding receptacle (three-prong). An adapter should not be used with battery charger.

I. CHARGER MAINTENANCE AND CARE

Clean the clamps each time you are finished charging. Wipe off any battery fluid that may have come in contact with the clamps to prevent corrosion.

Coil the output cord neatly when storing the charger. This will prevent accidental damage to the cord and charger.

J. INDICATION OF A FULLY CHARGED BATTERY

A hydrometer reading of the specific gravity of the electrolyte (fluid) of the battery in good condition should be between 1.25 and 1.285. When the battery reaches 80 - 85% of full charge, bubbles will appear on the surface of the fluid. As the battery nears full charge, bubbling will become more vigorous.

K. CHARGING TIMES

This battery charger has a rated output of 3 ampere. This output will vary with the age and condition of the battery being charged.

<u>Amp Hour Battery Charger</u>	<u>Average Charge Times in Hours</u>
4	1.5 – 2
10	3.5 – 4
20	7 – 8
30	11 – 12
45	16.5 – 17
60	22 – 23

LIMITED WARRANTY

Schumacher Electric Corporation makes this limited warranty to the original purchaser at retail of this product. This limited warranty is not transferable.

Schumacher Electric Corporation warrants this battery charger for two years from date of purchase at retail against defective material or workmanship. If such should occur, the unit will be repaired or replaced at the option of the manufacturer. It is the obligation of the purchaser to forward the unit together with proof of purchase, transportation and / or mailing charges prepaid to the manufacturer or its authorized representative. This limited warranty is void if the product is misused, subjected to careless handling, or repaired by anyone other than the factory or other authorized factory representative.

The manufacturer makes no warranty other than this limited warranty and expressly excludes any implied warranty including any warranty for consequential damages.

This is the only express limited warranty and the manufacturer neither assumes nor authorizes anyone to assume or make any other obligation towards the product other than this express limited warranty. The manufacturer makes no warranty of merchantability or fitness for purpose of this product and expressly excludes such from this limited warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages or length of implied warranty so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.